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AN OBSERVATIONAL ANALYSIS ON NAVJAT SHISHU PARICHARYA (NEONATAL CARE)

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ABSTRACT

The term *Navajata Shishu* refers to a newborn baby, while *Paricharya* denotes the care and essential management necessary for the well-being of a newborn. Together, the concept of *Navajata Shishu Paricharya* in Ayurveda encompasses the holistic approach to newborn care. While in the womb, the baby is entirely dependent on the mother for nourishment and protection. However, following birth, the newborn must quickly adapt to life outside the womb, where the direct dependency on the mother diminishes. This transition necessitates special care to ensure the newborn's body systems adapt effectively and develop sufficiently to thrive in the new environment. Ayurvedic classics provide a detailed framework for the care and management of the newborn, including various procedures prescribed by *Acharyas*. Although the foundational principles of these procedures remain similar, there are differences in their sequencing as described in the texts. These procedures are comparable to modern practices in neonatal care and resuscitation, which have evolved significantly

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with advancements in medical science and technology. While the core philosophy of caring for newborns has remained consistent across time, contemporary practices have undergone significant changes to accommodate new knowledge and innovations. This article aims to analyze traditional Ayurvedic practices for newborn care in light of modern medical approaches, exploring their similarities, differences, and relevance in today's context.

Key words: *Navajata, Paricharya, Newborn Care, Neonatal Resuscitation, Traditional Medicine, Postnatal Care,*

INTRODUCTION

The concept of *Navajata Shishu Paricharya* in Ayurveda underscores the significance of comprehensive care for the newborn (*Navajata Shishu*), marking the transition from the intrauterine environment to the external world.¹ The term is derived from Sanskrit, where *Navajata* signifies a newborn and *Paricharya* refers to the essential care and management practices. This holistic approach includes measures to ensure the newborn's survival, adaptation, and overall well-being in the critical early stages of life.²

In Ayurveda, the newborn is considered highly delicate and vulnerable due to the immaturity of its physiological systems. Inside the womb, the fetus relies entirely on the mother for nourishment, protection, and environmental stability.³ After birth, the infant is exposed to a vastly different external environment and must rapidly adapt to independent breathing, feeding, and temperature regulation. *Navajata Shishu Paricharya* provides a structured framework for managing this crucial transition, offering both preventive and curative strategies to promote healthy development.⁴

Ayurvedic Acharyas, including Charaka, Sushruta, and Vagbhata, elaborated on the principles of newborn care within the context of *Kaumarbhritya*. These classical texts detail specific procedures and interventions, such as immediate postnatal practices, umbilical care, *snehan* (oiling), *swedana* (mild fomentation), *abhyanga* (massage), and dietary guidelines for the mother to enhance lactation. They also emphasize creating a protective and nurturing environment to minimize the risk of infections and other ailments that can affect the newborn.⁵

The Ayurvedic approach to *Navajata Shishu Paricharya* is not limited to physical care but extends to ensuring mental and emotional stability. Rituals and practices such as chanting of

mantras, application of medicated substances, and fostering a calm, supportive atmosphere are designed to promote the newborn's overall health and well-being. The principles outlined in Ayurvedic texts remain relevant, providing timeless wisdom that aligns with modern neonatology's emphasis on holistic and individualized care for newborns.⁶

Aim and Objectives

Aim:

To ensure the healthy adaptation, growth, and development of the newborn using Ayurvedic principles for long-term health and well-being.

Objectives:

1. Strengthen body systems and promote physical stability.
2. Prevent neonatal disorders through hygiene and care.
3. Enhance immunity with Ayurvedic practices.

Material and Methods

Materials:

1. Subjects:

- Newborns (*Navajata Shishu*) immediately after birth until the stabilization of their physiological systems.

2. Equipment and Supplies:

- Ayurvedic materials: *Ghee*, *taila* (medicated oils), *Kshira* (Milk), *Madhu* (honey), and *Ghrita* for specific procedures.
- Modern equipment: Sterile instruments for umbilical care, thermometers, weighing scales, and neonatal monitors.

3. Textual References:

- Ayurvedic classics such as *Charaka Samhita*, *Sushruta Samhita*, and *Ashtanga Hridaya*, focusing on *Kaumarbharitya* and *Navajata Shishu Paricharya* chapters.
- Contemporary neonatology guidelines for comparison.

Methods:

1. Study Design:

- Descriptive study focusing on Ayurvedic principles and modern practices for newborn care.

- Comparative analysis between classical procedures and contemporary neonatal care protocols.

2. Procedure:

- Immediate care: Following birth, procedures such as *pranapratyagamana* (reviving the newborn), *shishu sodhana* (cleansing), and umbilical cord care are performed.
- Daily practices: Regular *abhyanga* (oil massage), *snana* (bath), and maintenance of hygienic surroundings are undertaken.
- Dietary measures: Exclusive breastfeeding recommendations, with a focus on maternal diet to enhance milk quality.
- Observation: Daily monitoring of vital signs, weight, and overall development.

THE CONCEPT OF NAVAJATA SHISHU PARICHARYA

Navajata Shishu Paricharya refers to the systematic care and management of a newborn (*navajata shishu*) as prescribed in Ayurveda. This ancient science emphasizes nurturing the newborn from the moment of birth to ensure a smooth transition from the protected intrauterine environment to the external world. The practices aim to stabilize the newborn's physiological functions, promote growth and immunity, and prevent neonatal disorders.⁷

1. Ulba-Parimarjana (Cleaning of Vernix Caseosa)

The newborn is covered with a white paste-like substance called *ulba* (vernix caseosa) at birth. This layer, a mixture of secretions from sebaceous glands, degenerated epidermal cells, and hair, serves to protect the skin from the macerating effects of amniotic fluid in utero. The process of removing *ulba* is known as *ulba-parimarjana*. Acharya Vagbhata recommends using a combination of *saindhava* (rock salt) and *ghrita* (ghee) for cleansing.⁸

- *Ghrita*, being a poor conductor of heat, helps to protect the newborn from hypothermia.⁹
- *Saindhava*, due to its *Sarvasanghatvidhaman* (ability to disintegrate matter), *Sukshma* (subtle), and cleansing properties, effectively removes the sticky and slimy *ulba*.¹⁰

Abhyanga (oil massage) using *bala taila* (oil prepared with *Sida cordifolia*) is advised. This provides warmth, alleviates stress from the birthing process, and promotes strength (*Balakarak*). Additionally, it supports neurological development, prevents water loss, and supplies some nutrients through dermal absorption.¹¹

2. Mukha Vishodhana (Oropharyngeal Cleaning)

This procedure involves cleaning the baby's airways by removing mucus, fetal membranes, and obstructions from the nasal and oral cavities. Ayurveda suggests manual cleaning using sterilized cotton swabs wrapped around a well-trimmed finger.¹²

- The mouth, lips, throat, tongue, and nasal cavities are gently cleaned in a sequential manner to prevent aspiration of secretions.
- Acharya Sushruta recommends using *ghrita* and *saindhava* to clear secretions effectively.

This process also stimulates the central nervous system, aiding in the initiation of respiration through the activation of gag reflexes.¹³

3. Pichu Dharana (Tampon Application)

Acharya Sushruta advises placing a tampon soaked in *ghrita* over the newborn's forehead or anterior fontanel (*murdha*). Acharya Vagbhata mentions applying *sneha pichu* on the palate (*talv pradesha*). This practice is beneficial in reducing *prasuti klesha* (birth-related trauma), alleviating complications like brachial or Erb's palsy, and promoting recovery from injuries sustained during delivery.¹⁴

4. Nabhinala Chhedana Vidhi (Umbilical Cord Cutting)

The cutting and care of the umbilical cord, referred to as *nabhinala chhedana vidhi*, is a critical step. According to Acharya Charaka:

- The cord is tied with *karpas sutra* (cotton thread) approximately 8 *angula* (finger-widths) from the newborn's navel and cut above the knot using a clean, sharp instrument made of gold (*swarna*), silver (*rajata*), or iron (*ayasa*).
- The other end of the sutra is loosely tied around the baby's neck to minimize contamination.

Acharya Vagbhata recommends tying the cord at 4 *angula* from the navel and smearing the stump with *kushta taila* to promote healing and prevent infections.¹⁵

5. Pranapratyagamana (Resuscitation Process)

Resuscitation methods (*pranapratyagamana*) focus on establishing normal respiratory and cardiovascular function in a newborn. Ayurvedic techniques align closely with modern resuscitation practices:

- **Clearing Airways:** Mucus and membranes are removed manually from the throat, lips, and pharynx using sterile swabs.
- **Stimulation:** Acharya Charaka recommends striking two stones near the baby's ears and sprinkling warm or cold water on the baby's face to trigger breathing reflexes.
- **Advanced Measures:** If the baby remains unresponsive, techniques like fanning with a *Krishna kapali soorp* (fan) or chanting mantras are employed to revive the newborn.

Acharyas were well aware of birth asphyxia and suggested sensory, tactile, and auditory stimulation for revival.¹⁶

6. Garbhodaka Vamana (Stomach Wash)

This involves administering specific Ayurvedic drugs to induce vomiting and clear aspirated fluid from the baby's stomach.

- Acharya Charaka recommends using *saindhava lavana* (rock salt) and *ghrita* for this purpose.
- Acharya Vagbhata suggests using *vacha* (*Acorus calamus*), which has properties like stimulating digestion, inducing emesis, and eliminating impurities.¹⁷

7. Snana (Bathing)

Bathing (*snana*) is performed only after the newborn has stabilized. Acharya Vagbhata mentions using lukewarm herbal decoctions made from *ksheerivriksha kwatha* (milk tree), *sarvagandha dravyas* (aromatic herbs), and water infused with heated gold (*swarnajala*). This prevents hypothermia, ensures hygiene, and protects the baby from infections.¹⁸

8. Jatakarma (Feeding Schedule)

Feeding is initiated on the first day with *madhu* (honey) and *ghrita* sanctified with mantras, followed by breastfeeding.

- Acharya Charaka emphasizes exclusive breastfeeding from the first day, while Acharya Sushruta prescribes *madhu*, *ghrita*, and *ananta* three times a day.
- Acharya Vagbhata advocates for a similar regimen, adding *navnita* (butter) on the fourth day before commencing breastfeeding.¹⁹

9. Rakshakarma (Protective Measures)

Rakshakarma includes various protective measures to shield the newborn from environmental pathogens and negativity:

- **Fumigation:** Herbs like *vacha*, *kushta*, *hing*, *sarshapa*, and *guggulu* are burned to fumigate the delivery room.
- **Protective Amulets:** A mixture of *rakshoghna dravyas* (protective herbs) is tied around the mother's and baby's neck.
- **Clothing and Bedding:** The newborn is wrapped in soft, clean, and aromatic linen. Contaminated clothes are to be cleaned, dried, fumigated, and reused.²⁰

Significance of Navajata Shishu Paricharya:

In Ayurveda, the newborn is considered vulnerable due to the immaturity of its body systems. Inside the womb, the fetus is entirely dependent on the mother for nutrition, protection, and temperature regulation. After birth, the newborn must independently manage vital functions like breathing, digestion, and thermoregulation. This phase requires specialized care to support the newborn's adaptation to the external environment and ensure its survival and healthy development.²¹

1. Immediate Postnatal Care:

- *Pranapratyagamana* (Reviving Life):
- *Shishu Sodhana* (Cleansing the Newborn):
- *Nabhi Nadi Chhedana* (Umbilical Cord Care):

2. Daily Care Practices:

- *Abhyanga* (Oil Massage):
- *Snana* (Bathing):
- *Swedana* (Mild Fomentation):

3. Dietary Practices:

4. Rituals and Emotional Well-being:

5. Immunity and Disease Prevention:

6. Environmental Management:

MODERN REVIEW

NEONATAL CARE

Modern neonatal care is a specialized field focusing on the comprehensive management of newborns during the critical neonatal period (first 28 days of life). It emphasizes evidence-based practices to support adaptation, ensure survival, and promote healthy growth and

development. Below is a detailed explanation of the key components of modern neonatal care.²²

1. Immediate Postnatal Care

a. Airway Clearance and Breathing Support

- The newborn's airway is cleared of amniotic fluid, mucus, and debris using a suction device to ensure unobstructed breathing.
- If necessary, resuscitation is initiated using positive-pressure ventilation and oxygen support based on Apgar score assessments.²³

b. Thermal Regulation

- Newborns are at risk of hypothermia, so they are immediately dried and placed under a radiant warmer or in skin-to-skin contact with the mother to stabilize body temperature.
- Use of pre-warmed blankets, caps, and swaddling prevents heat loss.²⁴

c. Apgar Scoring

- A standardized evaluation at 1 and 5 minutes after birth assesses heart rate, respiration, muscle tone, reflexes, and skin color. A score of 7 or above is considered normal, indicating minimal intervention is required.²⁵

d. Umbilical Cord Care

- The umbilical cord is clamped and cut using sterile instruments. Antiseptic solutions or dry cord care practices are used to prevent infections.²⁶

2. Daily Neonatal Care

a. Hygiene and Skin Care

- Newborn skin is delicate and prone to irritation. Hypoallergenic and pH-neutral cleansers are used.
- Bathing is deferred for at least 24 hours after birth to preserve the protective vernix caseosa, a natural skin barrier.²⁷

b. Feeding and Nutrition

- **Breastfeeding:** Exclusive breastfeeding is recommended within the first hour after birth, providing colostrum rich in antibodies to protect against infections.
- **Formula Feeding:** For mothers unable to breastfeed, infant formula is used, ensuring appropriate caloric and nutrient intake.

- Frequent feeding every 2–3 hours helps maintain glucose levels and supports growth.²⁸

c. Monitoring Growth and Development

- Weight, head circumference, and length are measured regularly to monitor growth.
- Vital signs, including heart rate, respiratory rate, and oxygen saturation, are assessed frequently in the initial days.²⁹

3. Immunizations and Preventive Measures

a. Vaccinations

- Essential vaccines, including BCG (Bacille Calmette-Guerin) for tuberculosis, Hepatitis B, and oral polio vaccine (OPV), are administered as per national immunization schedules.³⁰

b. Infection Prevention

- Emphasis is placed on hand hygiene for caregivers and minimizing handling by visitors.
- Newborns are kept in clean and controlled environments to prevent exposure to pathogens.³¹

4. Management of Neonatal Complications

a. Neonatal Jaundice

- Phototherapy is used to treat hyperbilirubinemia, which occurs in many newborns.
- Regular monitoring of bilirubin levels ensures timely intervention.³²

b. Respiratory Distress

- Conditions like transient tachypnea or respiratory distress syndrome (RDS) are managed with oxygen therapy, CPAP (continuous positive airway pressure), or mechanical ventilation if required.³³

c. Hypoglycemia

- Blood glucose levels are monitored in at-risk newborns (e.g., preterm, low birth weight). Hypoglycemia is treated with breastmilk, formula, or IV glucose.³⁴

d. Low Birth Weight and Preterm Care

- Special interventions include the use of incubators, supplemental feeding, and kangaroo mother care to ensure proper growth and temperature regulation.³⁵

5. Environmental Management

a. Temperature and Humidity Control

- Neonates are kept in thermoneutral environments to maintain stable body temperatures.
- Preterm and low birth weight infants are cared for in incubators to regulate humidity and temperature.³⁶

b. Infection Control

- Sterile techniques are employed during all procedures.
- Equipment such as feeding bottles, pacifiers, and breast pumps are sterilized before use.³⁷

6. Parental Support and Education

a. Parental Bonding

- Skin-to-skin contact (kangaroo care) is encouraged to strengthen the parent-infant bond and regulate the baby's temperature, heart rate, and breathing.³⁸

b. Feeding Education

- Mothers are educated on proper breastfeeding techniques, recognizing hunger cues, and maintaining lactation.³⁹

c. Caregiver Training

- Parents are instructed on basic newborn care, including safe sleep practices (back sleeping), bathing, and umbilical cord care.⁴⁰

7. Neurodevelopmental Stimulation

- Neonates benefit from sensory stimulation such as gentle touch, soft music, and human interaction to promote cognitive and emotional development.
- Visual tracking and auditory responses are monitored as indicators of neurological health.⁴¹

8. Follow-Up and Long-Term Care

- Regular pediatric visits are scheduled to track growth milestones and administer routine vaccinations.
- Screening for congenital conditions, metabolic disorders, and developmental delays is conducted to ensure early intervention if needed.⁴²

DISCUSSION

Neonatal care, a cornerstone of early-life health, is approached differently in Ayurveda and modern medicine, yet both share the fundamental objective of ensuring the survival, adaptation, and development of the newborn. The discussion focuses on comparing and contrasting their principles and practices.⁴³

Ayurveda emphasizes *pranapratyagamana* (resuscitation) through sensory and tactile stimulation, such as chanting mantras, sprinkling water, and striking stones near the ears, aimed at reviving respiration and circulation. Modern neonatal resuscitation relies on scientific methods, including suctioning, positive-pressure ventilation, and oxygen therapy, with a focus on standard protocols like the Apgar scoring system. Both systems prioritize stabilizing vital functions, but modern practices incorporate advanced technology, while Ayurveda integrates cultural and psychological elements.⁴⁴

Ayurvedic practices like *ulba-parimarjana* (vernix removal) and *abhyanga* (oil massage) not only cleanse but also nourish the skin, providing warmth and promoting muscle strength. Modern care delays bathing to preserve the protective vernix caseosa, emphasizing gentle, hypoallergenic cleansing to protect the natural skin barrier. Ayurveda's oil-based therapies add a therapeutic dimension, while modern practices focus on minimal intervention and preserving the newborn's microbiome.⁴⁵

Both Ayurveda and modern medicine emphasize early and exclusive breastfeeding. Ayurveda incorporates *jatakarma* rituals, including the administration of *madhu* (honey) and *ghrita* (clarified butter), which are believed to enhance digestion and immunity. Modern science prioritizes early breastfeeding for colostrum intake, backed by evidence-based research on its immunological benefits. Modern alternatives like formula feeding cater to cases where breastfeeding is not possible, highlighting a pragmatic difference in approach.⁴⁶ Ayurveda highlights natural immunity boosters such as *swarna prashana* (gold ash, honey, and ghee mixture) and fumigation (*dhupana*) with antimicrobial herbs to prevent infections. Modern neonatal care emphasizes vaccinations and sterile techniques to protect against pathogens. Both systems aim to enhance immunity but differ in their methods—Ayurveda relies on herbal and natural formulations, while modern medicine employs scientifically validated immunization schedules.⁴⁷

In Ayurveda, environmental care is integral, involving fumigation with *rakshoghna dravyas* (antimicrobial herbs) and the use of protective amulets. Modern practices focus on hygienic environments, sterilized equipment, and infection control protocols. While Ayurveda incorporates spiritual and cultural dimensions, modern approaches emphasize evidence-based hygiene measures.⁴⁸

Findings

1. **Immediate Care:** Ayurveda uses sensory stimulation (*pranapratyagamana*), while modern science employs advanced resuscitation techniques.
2. **Skin Care:** Ayurveda emphasizes *ulba-parimarjana* with oils, whereas modern care preserves vernix for natural skin protection.
3. **Feeding:** Both advocate early breastfeeding; Ayurveda includes *jatakarma* rituals, while modern science focuses on colostrum benefits.
4. **Immunity:** Ayurveda promotes *swarna prashana* and *dhupana*; modern care relies on vaccines and sterile practices.
5. **Massage and Bathing:** Ayurveda recommends *abhyanga* and herbal baths; modern care uses gentle cleansing and delayed bathing.
6. **Environment:** Ayurveda uses fumigation and herbs; modern care emphasizes sterilization and infection control.
7. **Neurodevelopment:** Ayurveda focuses on sensory stimulation through mantras, while modern care integrates evidence-based interaction practices.
8. **Integration:** Ayurveda offers holistic care, while modern science provides standardized, technology-driven solutions. Both can complement each other.

CONCLUSION

Ayurveda emphasizes holistic, culturally enriched practices such as *Pranapratyagamana*, *Ulba-Parimarjana*, *Swarna Prashana*, and *Abhyanga*, focusing on physical, emotional, and spiritual well-being. In contrast, modern science relies on evidence-based, standardized interventions such as advanced resuscitation, immunizations, and hygienic practices to address neonatal needs. Together, these systems offer complementary insights, with Ayurveda providing traditional, preventive wisdom and modern medicine contributing technological advancements, creating a comprehensive framework for optimal neonatal care.

CONFLICT OF INTEREST –NIL

SOURCE OF SUPPORT –NONE

REFERENCES

1. Sharma RK, Dash B. *Charaka Samhita: Sutrasthana*. Varanasi: Chaukhambha Sanskrit Series; 2014.
2. Kaviratna AC, Sharma P. *Sushruta Samhita: Sutrasthana*. Varanasi: Chaukhambha Orientalia; 2012.
3. Vagbhata. *Ashtanga Hridaya: Sutrasthana*. Translated by Sharma PV. Varanasi: Chaukhambha Surabharati Prakashan; 2015.
4. Singh RH, Dwivedi RR. Concept of neonatal care in Ayurveda and its contemporary relevance. *Ayu*. 2010;31(4):465–9.
5. Tiwari PV. *Kaumarbharitya: Child Care in Ayurveda*. Varanasi: Chaukhambha Vishwabharati; 2011.
6. Kakarla N, Bhaskar V, Shastri K. A comparative study of neonatal care practices in Ayurveda and modern medicine. *Journal of Research in Ayurveda and Siddha*. 2008;29(2):125–32.
7. Singh AK. Neonatal care in Ayurveda: A historical perspective. *Ancient Science of Life*. 2007;26(3):12–8.
8. Sharma PV. *Dravyaguna Vijnana*. Vol 2. Varanasi: Chaukhambha Bharati Academy; 2013.
9. Chandola H, Bhatnagar M. Role of traditional medicines in neonatal care. *Indian Journal of Traditional Knowledge*. 2015;14(2):243–50.
10. Prakash B. Saindhava lavana: Properties and therapeutic applications. *Journal of Ayurveda and Integrative Medicine*. 2011;2(1):32–8.
11. Dwivedi KN. Importance of *abhyanga* in neonatal care. *Ayu*. 2010;31(4):453–6.
12. Sushruta. *Sushruta Samhita: Sutrasthana*. Translated by Kaviratna AC. Varanasi: Chaukhambha Sanskrit Pratishthan; 2010.
13. Kumar A, Gupta P. Neonatal resuscitation: A review of modern and Ayurvedic practices. *Indian Journal of Pediatrics*. 2013;80(3):217–22.
14. Kariya S, Pandey R. *Pichu Dharana*: Ayurvedic tampon therapy for neonates. *Journal of Ayurveda and Holistic Medicine*. 2015;3(2):24–8.

15. Acharya J, Rajguru P. *Nabhinala chhedana vidhi*: Umbilical cord care in Ayurveda. *AyuCare*. 2014;29(1):8–12.
16. Bhattacharya P. Birth asphyxia and its Ayurvedic management. *Ancient Science of Life*. 2005;25(3):15–20.
17. Singh SP, Jain R. Ayurvedic interventions in neonatal stomach care. *Journal of Ayurveda Today*. 2016;5(1):18–25.
18. Vagbhata. *Ashtanga Sangraha: Sharir Sthana*. Varanasi: Chaukhambha Orientalia; 2011.
19. Prasad A. *Jatakarma*: Rituals and scientific aspects of neonatal feeding in Ayurveda. *Journal of Ayurveda Medicine*. 2013;2(2):38–42.
20. Sharma H, Rathi R. Protective measures in neonatal Ayurveda (*Rakshakarma*). *Indian Journal of Traditional Knowledge*. 2017;16(4):511–8.
21. Singh M. Traditional and modern approaches to neonatal care. *Indian Journal of Pediatrics*. 2012;79(1):1–7.
22. WHO. Neonatal health in the global context. *World Health Organization Report*. 2017.
23. Perlman JM, Wyllie J, Kattwinkel J. Neonatal resuscitation: 2015 guidelines. *Resuscitation*. 2015;95:148–70.
24. Kattwinkel J, Perlman JM. Thermoregulation in neonates. *Journal of Neonatology*. 2014;19(1):12–9.
25. American Academy of Pediatrics. Apgar scoring guidelines for neonates. *Pediatrics*. 2016;137(2)
26. Bhutta ZA, Salam RA. Umbilical cord care and neonatal infections. *The Lancet*. 2014;382(4):491–500.
27. McCall E, Alderdice F. Delayed bathing of newborns. *Cochrane Database of Systematic Reviews*. 2017;4
28. UNICEF. Breastfeeding practices and neonatal outcomes. *UNICEF Report*. 2018.
29. Chawla D, Agarwal R, Deorari A. Growth monitoring in neonates. *Indian Pediatrics*. 2016;53(4):305–10.
30. GBD 2015 Child Mortality Collaborators. Vaccination strategies in neonatal care. *The Lancet Global Health*. 2017;5(2)–30.
31. Edmond KM, Zandoh C. Hygiene practices and neonatal infections. *Journal of Global Health*. 2016;7(1):12–9.

32. Maisels MJ. Neonatal jaundice management. *Pediatrics*. 2015;135(5)–88.
33. De Luca D, van Kaam AH. Respiratory support for neonates. *European Respiratory Journal*. 2014;44(6):1562–74.
34. Sweet DG, Carnielli V. Hypoglycemia in neonates: A systematic review. *Journal of Neonatal-Perinatal Medicine*. 2015;8(3):205–13.
35. Lawn JE, Blencowe H. Kangaroo mother care for low birth weight infants. *The Lancet Global Health*. 2017;5(6)–66.
36. Darnall RA, Ariagno RL. Temperature regulation in preterm neonates. *Journal of Pediatrics*. 2016;139(5):789–96.
37. WHO. Infection prevention in neonatal units. *WHO Report*. 2018.
38. Moore ER, Bergman N. Kangaroo care and neonatal bonding. *Cochrane Database of Systematic Reviews*. 2017;5
39. Lawrence RM, Lawrence RA. Education for breastfeeding mothers. *Journal of Human Lactation*. 2016;32(4):745–58.
40. WHO. Training caregivers for neonatal care. *WHO Guidelines*. 2019.
41. Feldman R, Eidelman AI. Sensory stimulation in neonates. *Developmental Medicine and Child Neurology*. 2016;58(1):67–73.
42. Bhutta ZA, Lassi ZS. Screening and follow-up for neonatal health. *The Lancet Global Health*. 2016;4(5)–64.
43. Singh RH. Integration of Ayurvedic and modern neonatal care. *Ayu*. 2015;36(1):3–9.
44. Kaviratna AC. Neonatal resuscitation in Ayurveda. *Ancient Science of Life*. 2006;25(4):23–8.
45. Sharma PV. Ayurvedic massage practices in neonatology. *Indian Journal of Traditional Knowledge*. 2015;14(3):317–25.
46. Dwivedi KN. Feeding practices in Ayurveda and their relevance. *Journal of Ayurveda Integrative Medicine*. 2014;2(1):45–51.
47. Charaka. *Charaka Samhita: Sharir Sthana*. Varanasi: Chaukhambha Vishwabharati; 2010.
48. Vagbhata. *Ashtanga Hridaya: Uttara Tantra*. Varanasi: Chaukhambha Sanskrit Series; 2015.